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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,686	12/20/2003	John F. Allen	H0001409	7808

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EXAMINER

TRIEU, THAI BA

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 08/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/743,686

Applicant(s)

ALLEN ET AL.

Examiner

Thai-Ba Trieu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Oath/Declaration*

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the city and either state or foreign country of residence of each inventor. The residence information may be provided on either on an application data sheet or supplemental oath or declaration. Specifically, the residence information, signature, and the signing date of the 3<sup>rd</sup> inventor, **Mr. Rhett Hedrick**, and the residence information of the 5<sup>th</sup> inventor, Mr. **Kevin Birch**, has not been provided.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, the recitation of "preventing/controlling" renders the claims indefinite, since the intended scope is not clear that the system and the method is used for

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preventing, or for controlling, or for both of preventing and controlling. See MPEP § 2173.05(d).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

***Claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Masuda (Pub. Number US 2004/0093867 A1).***

**Regarding claim 1**, Masuda discloses a system for preventing/controlling compressor surge in an electrically assisted turbocharger (11) that is coupled to an internal combustion engine (1) comprising:

an electric motor (11b) disposed around a turbocharger shaft (Not Numbered) having attached thereto a compressor (Not Numbered) at one shaft end and a turbine (11a) at an opposite shaft end (See Figure 1);

an electric motor controller (22, 16) electrically coupled to the electric motor (11b);

a memory means electrically coupled to the electric motor controller (22), the memory means having a multi-dimensional map of compressor surge conditions stored therein; and

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at least two sensors (11b, 15, 17, 19, 26, 28) electrically coupled to the electric motor controller (22, 16), the sensors being configured to monitor operating conditions of at least one of the turbocharger and an internal combustion engine coupled thereto; the electric motor controller further configured to control operation of the electric motor responsive to signals provided from the sensors as correlated to the multi-dimensional map of surge conditions stored in the memory (See Paragraph [0037]).

**Regarding claim 3,** Masuda discloses a system for preventing/controlling compressor surge in an electrically assisted turbocharger (11) that is coupled to an internal combustion engine comprising:

an electric motor (11b) disposed around a turbocharger shaft to provide rotational movement thereto;

an electric motor controller (22, 16) coupled to the electric motor (11b) for controlling rotational movement provided by the electric motor;

an intake air sensor (27) coupled to the electric motor controller for sensing a volume of air entering the turbocharger (11); a pressure ratio sensor (19) coupled to the electric motor controller (22, 16) for sensing a compressor pressure ratio; and

a memory electrically connected to the electric motor controller (22, 16), the memory having a multi-dimensional map stored therein of surge conditions correlating to the volume of air entering the turbocharger and the compressor pressure ratio;

the electric motor controller (16, 22) further configured to control the electric motor responsive to the signals from the intake air sensor (27) and from the pressure

ratio sensor (19) as correlated the multi-dimensional map of surge conditions stored in the memory (See Figure 1, Paragraphs [0022], [0023], [0024], [0025], [0036], [0037]).

***Claims 2 and 4 are rejected under 35 U.S.C. 102(e) as being anticipated by Shaffer (Patent Number 6,718,768 B2).***

**Regarding claim 2,** Shaffer discloses a system for preventing/controlling compressor surge in an electrically assisted turbocharger that is coupled to an internal combustion engine comprising:

- an electric motor (28, 30) disposed around a turbocharger shaft to provide rotational movement thereto;

- an electric motor controller (38) electrically coupled to the electric motor for controlling the operation of the electric motor;

- an engine speed sensor (40) electrically coupled to the electric motor controller for sensing the rotational speed of the internal combustion engine;

- a turbocharger speed sensing means (turbo speed sensor) coupled to the electric motor controller for sensing the rotational speed of the turbocharger shaft (24) ;
- and a memory electrically coupled to the electric motor controller (38);

- the memory having a multi-dimensional map stored therein of surge conditions correlating to the speed (via 40) of the internal combustion engine (10) and to the speed of the turbocharger; the electric motor controller (38) further configured to control the electric motor responsive to the signals provided from the engine speed sensor and from the turbocharger speed sensing means as correlated to the multi-dimensional map

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of surge conditions stored in the memory (See Figures 1-3, Column 3, lines 14-67, and Column 4, lines 1-27).

**Regarding claim 4**, Shaffer discloses a method for preventing/controlling compressor surge in an electrically assisted turbocharger (36) that is coupled to an internal combustion engine (10), the turbocharger (20) including an electric motor (28,30) disposed around a turbocharger shaft (24) to provide rotational movement thereto (See Figures 1-3), the method comprising the steps of:

sensing a first parameter indicative of the rotational speed of the internal combustion engine (40) (See Column 3, lines 13-33);

sensing a second parameter indicative of the rotational speed of the turbocharger shaft (See Column 3, lines 13-33); and

controlling the electric motor (38) responsive to said first and second parameters so as to avoid surge based on a multi-dimensional map correlating compressor surge conditions to the speed of the internal combustion engine and to the speed of the turbocharger (See Column 3, lines 13-33).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Allen et al. (US Patent Number 6,609,375 B2) disclose an air-cooling system for electric assisted turbocharger.

- Gladden et al. (US Patent Number 6,553,764 B1) disclose enhanced response turbocharger using flywheel storage.
- Bowman et al. (US Patent Number 6,415,606 B1) disclose a method and apparatus for turbocharging an engine of a locomotive.
- Woollenweber et al. (US Patent Number 6,079,211) disclose a two-stage supercharging system for internal combustion engines.
- Halami et al. (US Patent Number 5,560,208) disclose a motor assisted variable geometry turbocharger system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (703) 308-6450. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.



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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB  
August 19, 2004



Thai-Ba Trieu  
Patent Examiner  
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